

TMDL FOR TURBIDITY FOR VINTON WATERWAY (SUBSEGMENT 110601) IN THE SABINE RIVER BASIN, LOUISIANA Fact Sheet

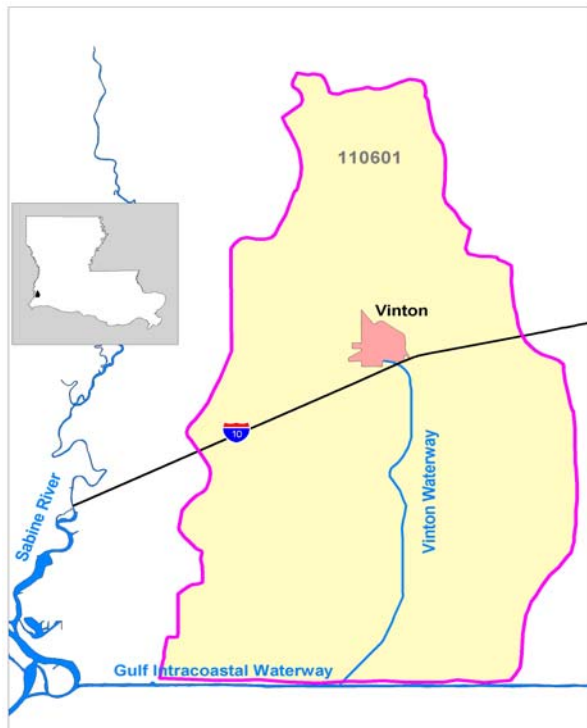


Figure 1. Location of impaired subsegment in the Sabine River Basin included in this report

Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's Water Quality Planning and Management Regulations (Title 40 of the *Code of Federal Regulations* [CFR] Part 130) require states to develop Total Maximum Daily Loads (TMDLs) for waterbodies that are not meeting water quality standards. A TMDL establishes the amount of a pollutant that a waterbody can assimilate without exceeding its water quality standard for that pollutant. TMDLs provide the scientific basis for a state to establish water quality-based controls to reduce pollution from both point and nonpoint sources to restore and maintain the quality of the state's water resources.

A TMDL for a given pollutant and waterbody is composed of the sum of individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background levels. In addition, the TMDL must include an implicit or explicit margin of safety (MOS) to account for the uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody and may include a future growth (FG) component.

This report presents a TMDL that has been developed for turbidity for Vinton Waterway (subsegment 110601) located in the Sabine River basin in southwestern Louisiana.

The Vinton Waterway (subsegment 110601) is a navigation and drainage canal connecting the city of Vinton, Louisiana to the Gulf Intracoastal Waterway. This subsegment covers 110 mi², and the two largest land uses are wetlands (34%) and pasture/hay (31%).

The Vinton Waterway was included on the Louisiana Department of Environmental Quality (LDEQ) final 2004 303(d) list as not supporting its fish and wildlife propagation designated use. This waterbody was ranked as priority #1 for TMDL development. Stream bank modification / destabilization was identified as a suspected source of impairment in the 303(d) list.

Because turbidity cannot be expressed as a mass load, this turbidity TMDL was expressed using TSS as a surrogate. A regression between TSS and turbidity was developed, and a target TSS concentration for the subsegment was calculated using the regression equation and numeric criteria for turbidity (50 NTU) in the Louisiana water quality standards. The target TSS concentration calculated from the turbidity criterion of 50 NTU was 40 mg/L.

This TMDL was developed using an average annual mass budget that was based on a long term water balance calculated for this region by the Louisiana Office of State Climatology. Average annual flow for the subsegment was calculated using the average annual runoff from the water balance, and the TMDL was calculated as the average annual flow multiplied by the target TSS concentration. For this TMDL, an implicit margin of safety (MOS) was incorporated through the use of conservative assumptions. The primary conservative assumption was to treat TSS as a conservative parameter that does not settle out of the water column. In addition to the MOS, 10% of the TMDL was set aside for future growth (FG).

Percent reductions required to meet water quality criterion (or associated targets) are determined by reducing the measured concentrations until the reduced concentrations are all less than the TSS target. Finally the TMDL, MOS, FG, WLA and LA are calculated based on the reduced loads.

In TMDL development, allowable loadings for all pollutant sources are determined so that they add up to no more than the TMDL. WLA accounts for permitted point source discharges. There was one point source discharge permitted for TSS. However it was determined this TSS discharge would not impact the Vinton Waterway and it was not included in the TMDL. The LA includes background loadings and human-induced nonpoint sources. A FG component of 10 percent was also included. For this TMDL the MOS was implicit based on the assumptions stated above. A summary of the TMDL for the subsegment is presented in Table 1.

Table 1. Summary of TMDLs for subsegments in this report.

Parameter	Subsegment Number	Subsegment Name	Loads (tons/day)					Percent Reduction Needed
			WLA	LA	MOS	FG	TMDL	
Turbidity	110601	Vinton Waterway	0	32.35	implicit	3.60	35.95	65%

For More Information

EPA seeks input on this proposed TMDL, including comments, information, and data from the general and affected public. For additional information on this TMDL project, please contact the EPA staff listed below:

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